Remarks

Claims 1-24 remain in this application. Claims 1-2, 4-14 and 16-24 were previously amended.

Claim Rejections – 35 USC 103

Claims 1-24 were rejected under 35 U.S.C. 103 as being unpatentable over Bommaiah et al in view of Chiu et al. Applicants respectfully traverse this rejection.

Regarding claim 1, claim 1 as previously amended recites as follows.

1. A communications system for transporting multiple individual video streams from a centralized location to multiple end user devices, the system comprising:

a network that transmits the multiple individual video streams from a centralized location to a local center located nearer than the centralized location to the multiple end user devices;

a video cache at the local center capable of receiving the multiple individual video streams from the centralized location;

multiple customer premises devices capable of receiving the multiple individual video streams from the video cache; and

a stream manager that controls the multiple individual video streams from the centralized location to the local center,

wherein the stream manager controls bandwidth prioritization between the centralized location and the local center, and

wherein the bandwidth prioritization is controlled by the stream manager such that as an individual video stream reaches a low fill level in the video cache at the local center, that individual video stream is assigned a higher bandwidth priority when compared to other individual video streams that have fuller fill levels.

As recited in claim 1, the claimed invention pertains to a "**stream manager**" which is "configured to control **bandwidth prioritization** between the centralized

location and the local center." (Emphasis added.) The stream manager **113** is disclosed, for example, in FIG. 1 of the present application, which is reproduced below for convenience.

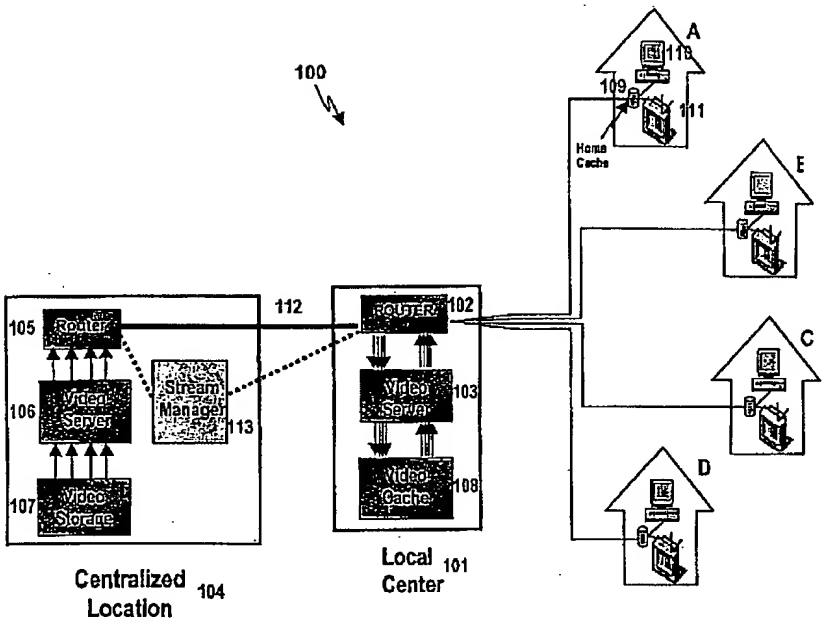

Figure 1

As further recited in claim 1, "the bandwidth prioritization is controlled by the stream manager such that as an individual video stream reaches a low fill level in the video cache at the local center, **that individual video stream is assigned a higher bandwidth priority when compared to other individual video streams** that have fuller fill levels." (Emphasis added.) This limitation is discussed, for example, on page 4, lines 7-21, of the present application, which is reproduced below for convenience.

> Bandwidth prioritization is controlled by the stream manager 113 which dynamically allocates available bandwidth to individual video streams based on an algorithm that sends more content to the local center video cache when there is available bandwidth and less when the transmission path 112 is nearing its overall capacity.
>
> As an individual video stream serving an end user from local center video cache 108 begins to reach the low end of its designated fill level, that stream is assigned a higher bandwidth priority when compared to caches for other video streams that are fuller. That priority is maintained until the cache supporting that individual stream is refilled to its threshold level. When overall demand for bandwidth on the transmission path 112 is light, the stream manager 113 will opt to fill the individual caches supporting requesting end users to capacities exceeding nominal fill levels in order to optimize the use of the dedicated transmission capacity. This will enable less bandwidth to be supplied to these caches in subsequent time increments when other end users make requests for video content or when the aggregate bandwidth for all streams is relatively high.

Applicants respectfully submit that the above-discussed limitations are neither disclosed nor suggested in the cited references.

Regarding the first reference, Bommaiah et al. relates to streaming multimedia information. However, Bommaiah et al. merely discloses a **buffer** management module which manages the disk spaces allocated for caching. (See, Bommaiah et al., col. 10, lines 23-55.) The buffer management module **manages a pool of buffers and allocates new buffers**, if necessary.

The buffer management of Bommaiah et al. is distinctly different from the **stream** management of the claimed invention. In contrast to buffer management, the claimed stream manager **adjusts the relative prioritization of the individual video streams** between the centralized location and the local center.

Regarding the second reference, Chiu et al. relates to detecting network congestion. The congestion is detected based on the numbers of missing messages in acknowledgement windows. (See Chiu et al., Abstract.) After the congestion is detected, each sending device adjusts its own **data transmission rate** based upon the congestion messages received. (See, Chiu et al., col. 11, lines 19-36.)

The technique disclosed in Chie et al. is distinctly different from the claimed invention. While in Chiu et al. each sending device adjusts its data transmission rate,

the claimed invention utilizes a stream manager to adjust the **relative prioritization of the individual video streams** between the centralized location and the local center.

Hence, neither Bommaiah et al. nor Chiu et al. nor a combination thereof discloses or suggests the above discussed claim limitations. For at least these reasons, applicants respectfully submit that claim 1 is patentably distinguished over the cited references.

Claims 2- 12 depend from claim 1. Hence, for at least the same reasons as discussed above in relation to claim 1, claims 2-12 are also patentably distinguished over the cited references.

Similar to claim 1, claim 13 recites a method where "the stream manager controls bandwidth prioritization." As discussed above, neither Bommaiah et al. nor Chiu et al. nor a combination thereof discloses or suggests this claim limitation. Hence, applicants respectfully submit that claim 13 is also patentably distinguished over the cited references.

Claims 14-24 depend from claim 13. Hence, for at least the same reasons as discussed above in relation to claim 13, claims 14-24 are also patentably distinguished over the cited references.

Conclusion

For at least the above-discussed reasons, applicants believe that the pending claims are patentably distinguished over the cited art. Favorable action is respectfully requested.

The examiner is also invited to call the below-referenced attorney to discuss this case.

Respectfully Submitted,

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Dated: June 29, 2005

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